

# Estonian pilots presentation

## Valkla and Kolgaküla Village Pilots

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# Project Partners, Estonia

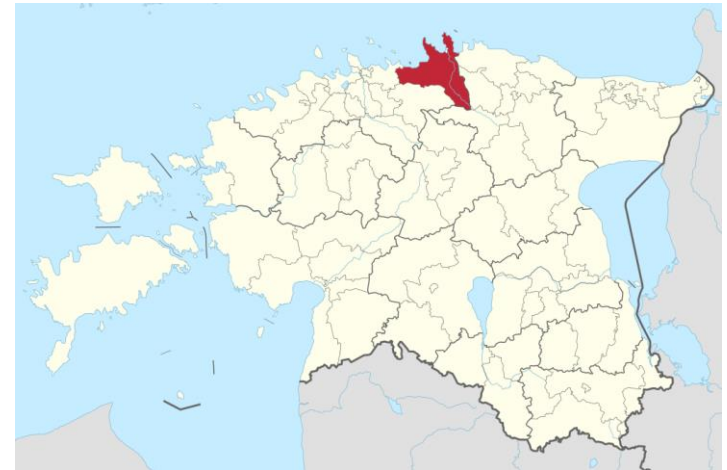
- **Tallinn University of Technology (TalTech)/  
Tallinna Tehnikaülikool** as Project Partner No 14
- **Kuusalu Municipality/Kuusalu vallavalitsus**  
as Project Partner No 15
- **Kuusalu Soojus Ltd/Kuusalu Soojus OÜ**  
as Project Partner No 16

Total number of Project Partners  
(Poland, Lithuania, Latvia, Estonia and Finland) - 13

# Kuusalu Soojus

- Field of activity - Utilities
- 100% of shares belongs to Municipality of Kuusalu
- Employees - 11
- Drinking Water - 14 regions
- Wastewater - 7 regions
- District Heating - 2 regions

Kuusalu parish



# Kuusalu Soojus

## Drinking Water



# Kuusalu Soojus

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## Wastewater



# Kuusalu Soojus

## District Heating



# Valkla village pilot

- The pilot plant is located in the northern Estonia village of Valkla, Kuusalu parish, Harju county.
- The pilot object is the sewage treatment system of **two apartment buildings (49 inhabitants in total)**
- The existing (not used for years) wastewater treatment systems were constructed in the end of the 1970s
- Until the construction of the new pilot, the households' sewage was collected into concrete holding tank and gully-emptier trucks transport it to the nearest WWTP.

# Valkla village pilot



Situation before



# Valkla village pilot

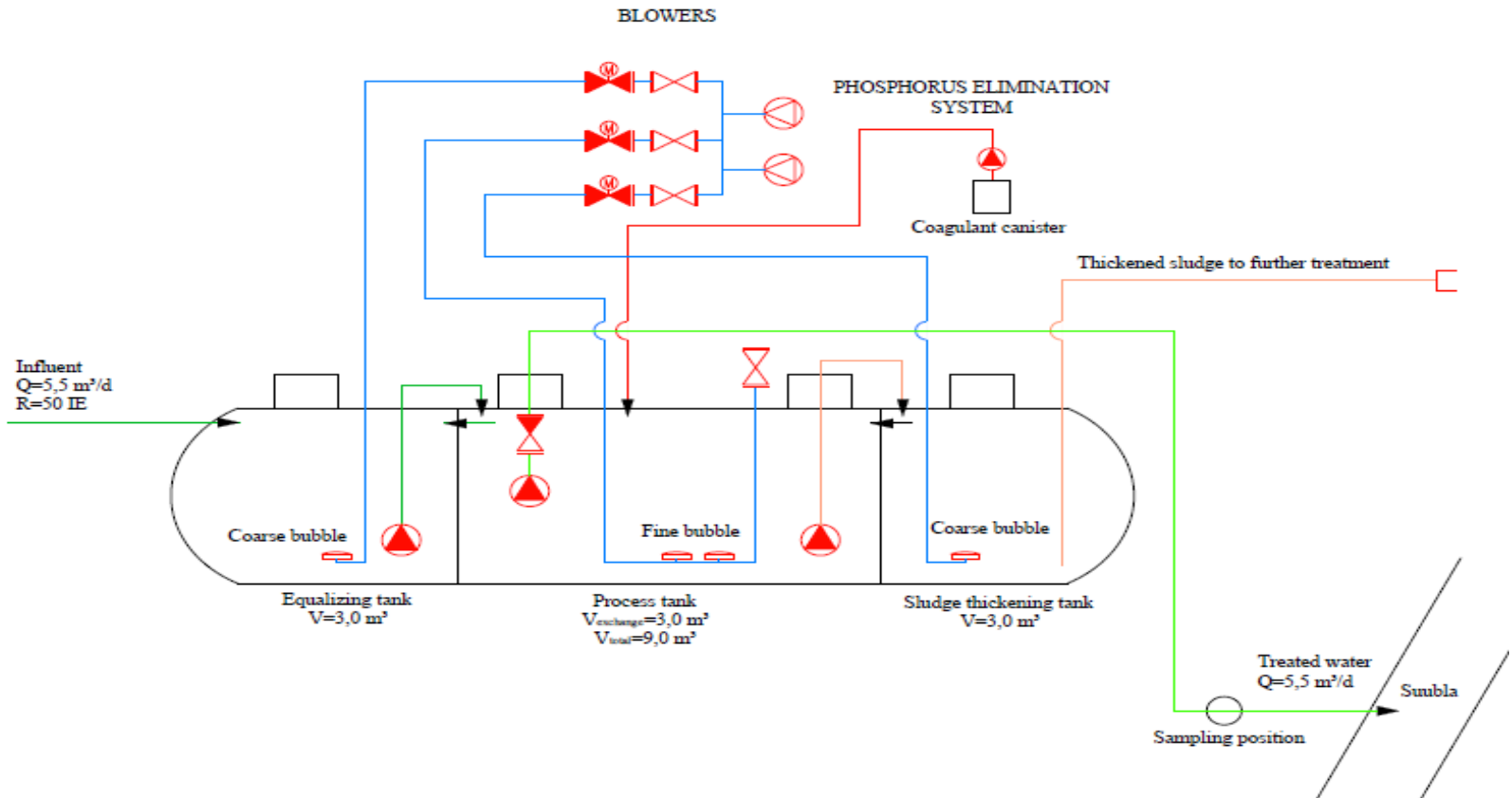


# Valkla village pilot

- Biological wastewater treatment system, Sequence Batch Reactors (SBR), with **activated sludge process**
- Construction of new WWTP and renovation of local pipelines **was conducted in November 2017**
- **TalTech is responsible for monitoring** the treatment efficacy of new system and for the environmental status of Valkla creek

# Valkla village pilot

## TECHNOLOGICAL SCHEME



# Valkla village pilot



# Valkla village pilot



Situation after

# Valkla village pilot



Situation after

# Valkla village pilot



# Valkla village pilot



Situation after



# Valkla village pilot



# Valkla village pilot



# Kolgaküla village pilot

- The pilot plant is located in northern Estonia, in the county of Harju, Kuusalu parish, Kolgaküla village
- Kolgaküla is located in the western **part of Lahemaa National Park**, about five kilometers away from the sea
- Kolgaküla (Kolco) is an ancient village, which was first **mentioned in written records in 1290**
- The pilot object is the separate sewage treatment system for **two apartment houses** (33 inhabitants in total).
- The existing wastewater treatment solution is biological oxidation ponds (2500 m<sup>2</sup>)

# Kolgaküla village pilot



Situation before

# Kolgaküla village pilot



Situation before

## Kolgaküla village pilot

- There will be installed biological wastewater treatment system, Sequence Batch Reactor (SBR) with **activated sludge process**
- Construction of new WWTP and renovation of local pipelines was **conducted in February 2018**
- **TalTech is responsible for monitoring** the efficacy of new treatment system and for the environmental status of Puntsu creek

# Kolgaküla village pilot



Let's begin...

# Kolgaküla village pilot





# Kolgaküla village pilot



Situation after

# Kolgaküla village pilot



## Valkla and Kolgaküla village pilots costs

	Valkla	Kolgaküla
SBA Reactor, €	9 200	9 200
Installation, €	8 000	8 000
Pipeline, m	190	290
Pipeline, €	18 000	26 000
Installed reactor, €	17 200	17 200
Totally, €	35 200	43 200

# Valkla and Kolgaküla village pilots efficiency

	In	Out	Requirements
BOD, mgO <sub>2</sub> /l	248 - 930	28 - 117	40
Suspended Solids; mg/l	92 - 1000	25 - 200	35
pH	7,7 - 8,9	7,05 - 8,4	6 - 9
P <sub>total</sub> , mg/l	22 - 39	1,3 - 11	-
N <sub>total</sub> , mg/l	150 - 412	24 - 121	-

# Valkla and Kolgaküla village pilots, summary

- Relatively small cost can bring big environmental benefit
- The same equipment from the same manufacturer has made both projects cheaper and service easier
- Only 2 weeks for installation for WWTP and additional 2 - 3 weeks for pipeline and problem is solved
- Often is only installation of WWTP not the best solution
- Two similar villages are for us on the waiting list

# Thank You!

Kalle Küngas  
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**VillageWaters**